ECKENFELDER INC.

March 16, 1992 6735

Mr. James J. Feeney
3HW21
USEPA Region III
Remedial Enforcement Division
6th Floor
841 Chestnut Street
Philadelphia, PA 19107

Dear Jim:

I am forwarding a copy of the memorandum I sent to Gene Miller at Lord Corporation regarding changes to the upcoming treatability study at the Shope's Landfill. As indicated in the memorandum, the changes in the work plan mostly reflect the presence of methane in the landfill.

Please contact me if you have any questions or comments. We are currently targeting a start-up date of Tuesday, March 24, 1992.

Sincerely,

ECKENFELDER INC.

(b) (4) [redacted]

Director
Remedial Technologies Development Division

Enclosure

cc: (b) (4) [redacted]

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ECKENFELDER INC.

MEMORANDUM

ORIGINAL (Red)

TO: (b) (4) **cc:** Jim Feeney

FROM: (b) (4) (b) (4)

DATE: 3/13/92 **PROJECT:** Shope's Treatability Study **JOB NO:** 6735

SUBJECT: Modifications to Work Plan

As you are aware, the presence of methane under the cap at the Shope's Landfill required that the Work Plan for the Treatability Study be modified. A combination of monitoring probes and passive vents were installed during the first part of the treatability study. The presence of methane precluded the evaluation of the "air-tightness" of the landfill since the pilot unit could not operate in light of the system safeguards. Thus a combination design was selected. We believe the configuration selected gives a good deal of flexibility for the testing phase regardless of the air tightness of the site and would hopefully be utilizable in the remediation itself. The monitoring probes that were installed are located approximately 100 and 235 feet from the extraction well. A series of three passive vents were installed around the extraction well at a distance of approximately 30 feet. The previously installed wells, EP9 and EP10, are also available to serve as monitoring probes. They are also located 30 to 40 feet from the extraction well (see Figure 1). (The proximity of these two wells results in the use of only one as a monitoring probe since the other would provide redundant information.)

Since an impact of the methane presence was that the testing to determine whether the landfill was indeed air tight could not be conducted, a modification to the Work Plan for sampling/monitoring during the pilot scale testing of vapor stripping needed to be made. Initially, the Work Plan included two testing trains depending upon the results of the air tightness testing. Since this was not determined, a modification to the Work Plan was developed and is given in Table 1. This is a summary of the new sampling/monitoring plan and should be considered to detail the minimum monitoring to be performed. Additional monitoring will be performed during the extended periods between sampling events. Additional sampling however is not anticipated unless behavior during operations indicate a need. The monitoring probes at 100 and 235 feet will be monitored and/or sampled as will one passive vent in proximity to the extraction well. Added to the VOC samples will be a number of methane samples which will be used to monitor the progress of this gas through the system. Also, added to the testing are two additional air flows to determine the vacuum/flow relationship in the landfill. It is believed that running the system at 50 cfm and 100 cfm for a total of 8 hours will not impact the overall amount of gas extracted from the landfill. The majority of the test (88 hours) will be run at 150 cfm. It is hoped that this duration will provide an indication of the air tightness of the landfill since it is believed that this information is critical to design purposes.

ORIGINAL (Red)

If, indeed, the information on air tightness is obtained from this part of the testing, one of the two testing trains described in the original Work Plan for the pulsed/slug testing can be followed. If it is not able to be determined, the passive wells will be kept closed during the pulsed/slug testing and the testing will proceed according to the protocol in the Work Plan for a site which is not air tight. Please note that methane may also be monitored during the pulsed/slug test. This decision will depend upon the results obtained from the first part of the testing.

Another change in the Work Plan includes the use of an HNu to monitor off gas from the carbon unit as well as soil gas at the monitoring probes and extraction well. An HNu does not "see" methane. It does, unfortunately, see water vapor. However, it was thought appropriate to have the HNu backup since, given the levels of methane previously measured, it is anticipated that OVA readings, including the continuous reading unit in the trailer, will "peak out", even on the highest scale since OVA's do "see" methane. It is proposed to take HNu readings per the schedule in Table 1 and take OVA readings should they come meaningful. These monitoring data will be used to see if there is any correlation to the chemical specific data. Note that the concentration of methane previously identified in the landfill will decrease the HNu response to the other VOCs present.

There has been no change in the list of chemical specific analyses to be performed on the Tedlar® bags samples. However, there will be only one Tedlar® bag per sample forwarded to the Lord (primary) analytical laboratory for testing. Since transport of the samples is over ground with a travel time of less than a half hour, the difficulties associated with Tedlar® bag shipments via airborne carriers are not encountered. During the first set of samples (toe, crest and cap areas) the laboratory did not require the second, back-up Tedlar® bag for any sample. Any samples shipped via airborne carriers will continue to have the second, backup Tedlar® bag included.

There have been some modifications made to the mobile unit to further improve safety features. These changes again reflect the presence of methane. These safety changes have been communicated under separate memoranda.

Lastly, it has been requested, in writing, from the Pennsylvania DER that a modification to the activated carbon unit discharge be permitted for the 96 hour treatability study testing. The carbon unit will be in place to adsorb the extracted VOCs, except methane. Methane does not sorb to the carbon. The airborne concentrations of methane as a result of the treatability testing have been modeled. This information has already been forwarded to PADER for their approval.